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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/229,849	01/13/1999	MARTIN SERRANO	07470/30001	5312

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FISH & RICHARDSON, PC  
4350 LA JOLLA VILLAGE DRIVE  
SUITE 500  
SAN DIEGO, CA 92122

EXAMINER

FLEURANTIN, JEAN B

ART UNIT PAPER NUMBER

2172

DATE MAILED: 04/18/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

V

# Office Action Summary

Application No.

09/229,849

Applicant(s)

SERRANO, MARTIN

Examiner

Jean B Fleurantin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 15 February 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 8-12, 17-21, 26 and 27 is/are rejected.
- 7) ☒ Claim(s) 4-7, 13-16 and 22-25 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

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## **DETAILED ACTION**

### ***Response to Amendment***

1. Claims 1-27 are remained for examination.
2. Applicant's arguments filed on 02/15/2002 on pages 2 through 6 with respect to claims 1-27 have been considered but are moot in view of the new ground(s) of rejection.

### ***Drawings***

3. The Formal Drawings submitted on 01/15/2002 are approved by the Draftsperson under 37 CFR 1.84 or 1.152.

### ***Claim Rejections - 35 U.S.C. § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, 8-12, 17-21, and 26-27 are rejected under 35 U.S. C. 103 (a) as being unpatentable over Stanfill et al. (US Pat. No. 5,819,021) in view of McLain et al. (US Pat. No. 6,295,518) ("Stanfill"), ("McLain").

As per claims 1, 10, and 19 Stanfill substantially teaches a method for producing a parallel computation specification based on such analysis (thus, a method that is particularly useful for

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applications running on parallel processing systems and is also useful for applications running on distributed processing systems, which is readable as a method for producing a parallel computation) (see col. 11, lines 20-22). But, Stanfill does not explicitly indicate the steps of the application program based on a script of a script-driven software tool, and where such parallel computation specification provides functional equivalence to the script when executed by a parallel runtime system. However, McLain implicitly indicates the step of a command response manager for reading control system commands and for formulating intelligent responses a script interpreter for executing scripts a script database containing data from actual network devices for use by the scripts a database manager for performing database functions, which is readable as application program based on a script of a script-driven software tool, and where such parallel computation specification provides functional equivalence to the script when executed by a parallel runtime system (see col. 3, lines 26-35). Also, in column 10, lines 49 through 61, McLain further teaches the steps of the script interpreter 218 executes the script interpreter 218 updates the command control vector and returns control to command response manager 216 after script interpreter 218 returns control to command response manager 216 several actions can be taken on the status returned if the script execution failed command response manager 216 sends a default response and returns control to the system manager if the script issued a request for data command response manager 216 transmits a message buffer and returns control to the control system, if the script completed successfully command response manager 216 transmits a message buffer and returns control to the control system. Thus, it would have been obvious to a person of

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ordinary skill in the art at the time the invention was made to modify the teachings of Stanfill and McLain with the steps of application program based on a script of a script-driven software tool, and where such parallel computation specification provides functional equivalence to the script when executed by a parallel runtime system. This modification would allow the teachings of Stanfill and McLain to improve the accuracy of the parallelization applications of script-driven tools, and provide a method that is particularly useful for applications running on parallel processing systems and is also useful for applications running on distributed processing systems (see col. 3, lines 34-36).

As per claims 2, 11, and 20, in addition to the discussion in claim 1 above; but, Stanfill does not explicitly indicate the steps of the application program based on a script of a script-driven software tool, comprising automatically analyzing the script and plus a fragment set based on such analysis, where such parallel computation specification and script fragment set provides functional equivalence to the script when executed by a parallel runtime system. However, McLain implicitly indicates the step of a command response manager for reading control system commands and for formulating intelligent responses a script interpreter for executing scripts a script database containing data from actual network devices for use by the scripts a database manager for performing database functions, which is readable as application program based on a script of a script-driven software tool, comprising automatically analyzing the script and plus a fragment set based on such analysis, where such parallel computation specification and script fragment set provides functional equivalence to the script when executed

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by a parallel runtime system (see col. 3, lines 26-35). McLain further teaches in column 3, lines 20 through 22, the steps of the program product preferably employ a simulated multi tasking controller to perform internal processes substantially in parallel. Thus, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the teachings of Stanfill and McLain with the steps of application program based on a script of a script-driven software tool, comprising automatically analyzing the script and plus a fragment set based on such analysis, where such parallel computation specification and script fragment set provides functional equivalence to the script when executed by a parallel runtime system. This modification would allow the teachings of Stanfill and McLain to improve the accuracy of the parallelization applications of script-driven tools, provide a network emulator using simple unintelligence responses while allowing more detailed responses to be programmed at a later time (see col. 4, lines 20-22).

As per claims 3, 12, and 21, in addition to the discussion in claims 1 and 2 above, Stanfill teaches constructing a serial dataflow graph from the parsed statements (thus, each cursor 29 will now be referring to a middle portion of an input partition 1 more specifically to the start of a next one of the data segments 27 of that input partition 1, thus processing will start up exactly where it left off in the previous execution phase 10 the output of each execution phase 10 is appended to each prior execution phase output making it appear that the application proceeded through the input data files 21 from the beginning to end without pause; which readable as serial dataflow graph from the parsed statements) (see col. 9, lines 25-35);

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c) constructing a parallel dataflow graph from the serial dataflow graph (thus, a parallel task starts with one or more input data sets having  $q$  initial partitions divides the input data sets into  $p$  partitions by some combination of partitioning elements 'i.e., partitioners/gatherers', runs an instance of a component program on each of the  $p$  partitions of the data and produces one or more sets of output files with each set being considered a partitioned data set; which is readable as constructing a parallel dataflow graph from the serial dataflow graph) (see col. 3, lines 42-48).

As per claims 8, 17, and 26, the limitations of claims 8, 17, and 26 are rejected in the analysis of claim 1 above, and these claims are rejected on that basis.

As per claims 9, 18, and 27 Stanfill substantially teaches a method as claimed, wherein producing the parallel computation specification includes applying at least one pre-defined parallelization rewrite algorithm selected from the group comprising simple partitioning, key-based partitioning, local-global division, external parallelism algorithm, and statement decomposition (thus, in cases where the manner of partitioning does not affect the results produced by the component program the partitioner may divide the data in any fashion it is also common that the partitioning be based on a mathematical function which assigns each record to one of the  $p$  partitions based on the data values in the record; and a system for the case of a component program which reads from a single input and writes to a single output the input data 21 has been partitioned into  $q=3$  initial partitions 1 the degree of desired parallelism is  $p=2$  three instances of a partitioner program 2 are run producing six intermediate results which are transmitted along communication channels 3 these intermediate results are read by two instances

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of a gatherer program 4 producing two temporary files 5 two instances of the component program 6 are then run each of which reads from a distinct temporary file 5 and writes to a distinct output file 7 the output files 7 comprise the partitions of an output data set 22 had there been multiple input data sets 21 then the partitioner 2 communication channels 3 gatherer 5 and temporary file 6 would have been replicated 'possibly varying the number of partitioners 2 and gatherers 3' once for each input data set; which is readable as wherein producing the parallel computation specification includes applying at least one pre-defined parallelization rewrite algorithm selected from the group comprising simple partitioning, key-based partitioning, local-global division, external parallelism algorithm) (see cols. 1 and 2; lines 61-2 and 24-43).

***Allowable Subject Matter***

5. Claims 4-7, 13-16, and 22-25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Andrews et al. US Patent No. 6,031,993 relates to the translation between high level computer programming language. Schoening et al. US Patent No. 6,205,465 relates to a mechanism that enables and manages parallel execution of computing processes. Isman US Patent 6,266,804 relates to the analysis of the execution of application programs by parallel processing systems. Stanfill et al. US Patent 5,712,971 relates to methods and systems for



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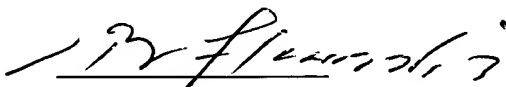
reconstructing the state of an interrupted computation in a parallel processing computer environment.

***Conclusion***

7. Any inquiry concerning this communication from examiner should be directed to Jean Bolte Fleurantin at (703) 308-6718. The examiner can normally be reached on Monday through Friday from 7:30 A.M. to 6:00 P.M.

If any attempt to reach the examiner by telephone is unsuccessful, the examiner's supervisor, Mrs. KIM VU can be reached at (703) 305-8449. The FAX phone numbers for the Group 2100 Customer Service Center are: *After Final* (703) 746-7238, *Official* (703) 746-7239, and *Non-Official* (703) 746-7240. NOTE: Documents transmitted by facsimile will be entered as official documents on the file wrapper unless clearly marked "***DRAFT***".

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group 2100 Customer Service Center receptionist whose telephone numbers are (703) 306-5631, (703) 306-5632, (703) 306-5633.



Jean Bolte Fleurantin

April 17, 2002

JBF/



HOSAIN T. ALAM  
PRIMARY EXAMINER